

program SIGCLEASE (part of the eGCG suite of programs hosted at the World Wide Web site of the Australian National Genomic Information Service {ANGIS}) indicates that the first 51 amino acids will be cleaved to produce the mature polypeptide (FIG. 14; SEQ ID NO: 38). --

Please delete the paragraph that appears at page 51, line 19, through page 52, line 2, and substitute the following paragraph in place thereof.

C<sup>13</sup> -- The amplification products HOMP5'/SO-I and SO-J/HO3'AN will be purified from agarose gel following separation by electrophoresis, and will be mixed, and subjected to further amplification using primers HOMP5' and HO3'AN. The resulting product encodes amino acids 1-52, 103-114, 125-188, 211-229, and 237-591 of wild-type NhhA of strain PMC21. The resulting product will be subjected to restriction digestion with *EagI* and *NcoI*, and cloned into pCO14K. This recombinant molecule contains regions C1, C2, C3, C4 and C5, thus deleting regions V1, V2, V3, and V4. The nucleotide sequence of the open reading frame is shown in FIG. 9 and SEQ ID NO: 32, and the predicted polypeptide sequence derived from this nucleotide sequence is shown in FIG. 9 and SEQ ID NO: 27. Analysis of the predicted amino acid sequence using the computer program SIGCLEASE (part of the eGCG suite of programs hosted at the World Wide Web site of the Australian National Genomic Information Service {ANGIS}) indicates that the first 49 amino acids will be cleaved to produce the mature polypeptide (FIG. 14; SEQ ID NO: 39). --

**In the Claims:**

Please cancel claim 24, without prejudice to filing of one or more additional patent applications including a claim directed to the subject matter of the canceled claim.

Please amend claims 25-32 to read as follows. For the Examiner's convenience a "Marked-Up Copy of Claims Amended" accompanies this Amendment. In that document, text which has been added to the claim is underlined, and text which has been deleted from the claims is ~~struck through~~. The Applicants have also enclosed a "Clean Copy of Claims, as Amended," containing all claims that are pending after entry of this Amendment, listed in an order which the Applicants believe is appropriate for issue.

Please amend claims 25-32 to read as follows.

25. (Amended) The isolated protein of claim 28, wherein the conserved region is selected from the group consisting of:

- (i) residues 1 to 50 of SEQ ID NO:11;
- (ii) residues 109 to 120 of SEQ ID NO:11;
- (iii) residues 135 to 198 of SEQ ID NO:11;
- (iv) residues 221 to 239 of SEQ ID NO:11; and
- (v) residues 249 to 604 of SEQ ID NO:11.

26. (Amended) The isolated protein of claim 28, wherein the protein comprises at least twelve contiguous amino acids of a sequence selected from the group consisting of SEQ ID NOs: 1-10.

27. (Amended) The isolated protein of claim 28, wherein the isolated protein has an amino acid sequence selected from the group consisting of:

- (i) residues 1 to 50 of SEQ ID NO: 1;
- (ii) residues 1 to 50 of SEQ ID NO: 2;
- (iii) residues 1 to 50 of SEQ ID NO: 3;
- (iv) residues 1 to 50 of SEQ ID NO: 4;
- (v) residues 1 to 50 of SEQ ID NO: 5;
- (vi) residues 1 to 50 of SEQ ID NO: 6;
- (vii) residues 1 to 50 of SEQ ID NO: 7;
- (viii) residues 1 to 50 of SEQ ID NO: 8;
- (ix) residues 1 to 50 of SEQ ID NO: 9;
- (x) residues 1 to 50 of SEQ ID NO: 10;
- (xi) residues 125 to 188 of SEQ ID NO: 1;
- (xii) residues 125 to 188 of SEQ ID NO: 2;
- (xiii) residues 122 to 185 of SEQ ID NO: 3;
- (xiv) residues 127 to 190 of SEQ ID NO: 4;
- (xv) residues 125 to 188 of SEQ ID NO: 5;

- (xvi) residues 132 to 195 of SEQ ID NO: 6;  
(xvii) residues 131 to 194 of SEQ ID NO: 7;  
(xviii) residues 131 to 194 of SEQ ID NO: 8;  
(xix) residues 127 to 190 of SEQ ID NO: 9;  
(xx) residues 125 to 188 of SEQ ID NO: 10;  
(xxi) residues 211 to 229 of SEQ ID NO: 1;  
(xxii) residues 206 to 224 of SEQ ID NO: 3;  
(xxiii) residues 237 to 591 of SEQ ID NO: 1;  
(xxiv) residues 237 to 592 of SEQ ID NO: 2;  
(xxv) residues 235 to 589 of SEQ ID NO: 3;  
(xxvi) residues 239 to 594 of SEQ ID NO: 4;  
(xxvii) residues 237 to 591 of SEQ ID NO: 5;  
(xxviii) residues 244 to 599 of SEQ ID NO: 6;  
(xxix) residues 243 to 598 of SEQ ID NO: 7;  
(xxx) residues 243 to 598 of SEQ ID NO: 8;  
(xxxi) residues 239 to 594 of SEQ ID NO: 9; and  
(xxxii) residues 237 to 592 of SEQ ID NO: 10.

28. (Amended) An isolated protein comprising at least twelve contiguous amino acids of a conserved region of SEQ ID NO: 11 and one or more variable (V) region amino acids of SEQ ID NO: 11, wherein the isolated protein is not a wild-type NhhA polypeptide and wherein upon administration to a mammal the protein elicits an immune response against one or more strains of *N. meningitidis*.

29. (Amended) The isolated protein of claim 28, having an amino acid sequence selected from the group consisting of: SEQ ID NO: 23; SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 38; and SEQ ID NO: 39.

D<sup>1</sup>  
(30) (Amended) An allelic variant of the isolated protein of claim 28, having at least 80% amino acid sequence identity to the isolated protein.

(31) (Amended) A pharmaceutical composition comprising one or more isolated proteins according to claim 28 and a pharmaceutically-acceptable carrier, diluent, or excipient.

(32) (Amended) The pharmaceutical composition of claim 31 which is immunogenic.

Please add claims 33 and 34, as follows.

D1  
C<sup>15</sup>  
NO: 23.  
-- 33. The isolated protein of claim 28, having the amino acid sequence SEQ ID

34. A mature, processed form of the isolated protein of claim 33, having the amino acid sequence SEQ ID NO: 35. --

**In the Drawings:**

Please substitute replacement drawing sheets 1-13, 24, and 25 in place of the like-numbered replacement drawing sheets filed by the Applicants on July 13, 2001.

**REMARKS**

Claims 25-34 are pending following entry of this Amendment. Claim 24 has been canceled without prejudice. Claims 26, 27 and 29 are considered by the Examiner to be withdrawn from consideration. Claims 25-32 have been amended. Claims 33 and 34 have been added. Claim 28 is the only independent claim. The amendments and additions made herein do not include new matter, as set forth in the ensuing section. No fee is believed due, this Amendment being timely filed on October 15, 2002 (October 12-14, being Saturday, Sunday, and a federal holiday in the District of Columbia, respectively), and the fee for 23 claims (including 3 independent claims) having already been paid.